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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,626	02/13/2001	Andrew J. Flint	200125.401	4380
500	7590	05/06/2004	EXAMINER PAK, YONG D	
SEED INTELLECTUAL PROPERTY LAW GROUP PLLC 701 FIFTH AVE SUITE 6300 SEATTLE, WA 98104-7092			ART UNIT 1652	PAPER NUMBER

DATE MAILED: 05/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/788,626

Applicant(s)

FLINT ET AL.

Examiner

Yong D Pak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 2/19/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-5 and 8-16 is/are pending in the application.
- 4a) Of the above claim(s) 14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,8-13,15 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 19, 2004, amending claim 1 and canceling claims 17-33, has been entered.

Claims 1, 3-5, 8-16 are pending.

Election/Restrictions

Claim 14 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 12.

Claim Objections

Claims 9-10, 13 and 16 are objected for being drawn to non-elected species.

Response to Arguments

Applicant's arguments with respect to claims 1, 3-5, 8-16 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3-5, 8-13 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tonks et al. in view of Flint et al. and Schade et al.

Tonks et al. (WO 98/04712 – form PTO 1449) teach a method of identifying an agent, which alters the interaction between a substrate-trapping mutant of a protein tyrosine phosphatase (PTP) and a substrate capable of generating a fluorescence energy signal (pages 6-7 and 16-17). Tonks et al. teach that to facilitate the determination of the presence of the protein/PTP complex, labeled phosphorylated

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substrates can be used, such as a fluorescein or a rhodamine and teaches that enzymatic activity assays are well known in the art, citing U.S. Patent No. 5,352,660 (page 13 and 16-17). Regarding claim 5, Tonks et al. teach several tyrosine phosphorylated peptides, such as p130^{cas}, EDG, p120 bcr:abl, MAP kinase, and insulin receptors (pages 14 and 15).

The difference between the instant invention and the reference of Tonks et al. is that the reference of Tonks et al. does not teach a human PTP-IB wherein Tyr-46 is substituted with a phenylalanine residue or measuring fluorescent polarization signals of the interaction between the enzyme and substrate in solution.

Flint et al. (form PTO 1449 – Proc. Natl. Acad. Sci. USA 94 (1997)) teach several substrate trapping PTP, including a mutant comprising a mutation at Tyr-46 (page 1681)

Schade et al. (form PTO-892 – U.S. Patent No. 5,804,935) teach a method of measuring enzymatic activity using fluorescence polarization signals wherein the enzyme and substrate are in solution, wherein the substrate has a detectable fluorophore (abstract, Columns 1-4 and 6-8).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to identify agents that alter the interaction between the mutant of Tonks et al. or Flint et al. by measuring fluorescent polarization signal taught by Schade et al. The motivation of using the mutant of Flint et al. is to trap the substrate in order to readily observed the complex formed in the presence of an agent that alters the interaction between the PTP and the substrate. The motivation of using fluorescent polarization signals to monitor the interaction between the PTP and its

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substrate is that fluorescence polarization assays is a rapid method of assaying enzymatic activity while the enzyme, substrate and test compounds are in solution. One of ordinary skill in the art would have had a reasonable expectation of success since fluorescence polarization assays are routinely performed in the art to measure enzymatic activity.

Claims 1, 3-5, 8-13 and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tonks et al. in view of Jia et al. and Schade et al.

Tonks et al. (U.S. Patent No. 5,912,138 – form PTO 1449) teach a method of identifying an agent, which alters the interaction between a substrate-trapping mutant of a protein tyrosine phosphatase (PTP) and a substrate capable of generating a fluorescence energy signal (Column 3, line 45 through Column 4, line 9 and Column 9, lines 12-50). Tonks et al. teach that to facilitate the determination of the presence of the protein/PTP complex, labeled phosphorylated substrates can be used, such as a fluorescein or a rhodamine and teaches that enzymatic activity assays are well known in the art, citing U.S. Patent No. 5,352,660 (Column 7, lines 7-28 and Column 9, lines 12-50). Regarding claim 5, Tonks et al. teach several tyrosine phosphorylated peptides, such as p130^{cas}, EDG, p120 bcr:abl, MAP kinase, and insulin receptors (Column 7, lines 51-58).

The difference between the instant invention and the reference of Tonks et al. is that the reference of Tonks et al. does not teach a human PTP-IB wherein Tyr-46 is

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substituted with a phenylalanine residue or measuring fluorescent polarization signals of the interaction between the enzyme and substrate in solution.

Flint et al. (form PTO 1449 – Proc. Natl. Acad. Sci. USA 94 (1997)) teach several substrate trapping PTP, including a mutant comprising a mutation at Tyr-46 (page 1681)

Schade et al. (form PTO-892 – U.S. Patent No. 5,804,935) teach a method of measuring enzymatic activity using fluorescence polarization signals wherein the enzyme and substrate are in solution, wherein the substrate has a detectable fluorophore (abstract, Columns 1-4 and 6-8).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to identify agents that alter the interaction between the mutant of Tonks et al. or Flint et al. by measuring fluorescent polarization signal taught by Schade et al. The motivation of using the mutant of Flint et al. is to trap the substrate in order to readily observed the complex formed in the presence of an agent that alters the interaction between the PTP and the substrate. The motivation of using fluorescent polarization signals to monitor the interaction between the PTP and its substrate is that fluorescence polarization assays is a rapid method of assaying enzymatic activity while the enzyme, substrate and test compounds are in solution. One of ordinary skill in the art would have had a reasonable expectation of success since fluorescence polarization assays are routinely performed in the art to measure enzymatic activity.

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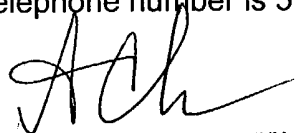
No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong Pak whose telephone number is 571-272-0935. The examiner can normally be reached 6:30 A.M. to 5:00 P.M. Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ponnathapu Achutamurthy can be reached on 571-272-0928. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9307 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-1600.

Yong D. Pak
Patent Examiner


PONNATHAPU ACHUTAMURTHY
SUPERVISORY PATENT EXAMINER
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